

DW-SRF 2013 Project

Green Project Reserve Calculation

Green Project Reserve Methodology using format from EPA's • June 22, 2009 guidance for GPR business cases

ESTIMATE OF VALUE OF WATER LOSS WORKSHEET

SRF PROJECT ID #	2013-12
1 Date:	25-Jul-13
2 PWSID #	ME0090660
3 System	HAMPDEN WATER DISTRICT
4 Project Name	Main Replacement Project
5 Location	Main Road North
6 Engineering Consultant	Woodard & Curran
7 Existing Main size, age, and type	8 and 10 inch cast iron unlined
8 Proposed New Water Main size and type	12" ductile iron cement lined
9 New Main Pipe Length	1,950
10 Estimated Project Cost	\$ 580,150

Note: Data from Utilities Annual Report to Maine Public Utilities Commission

Page	Line	Description	Units	2011 data
W-12	15	Total Production Water	gallons per year	101,259,000
W-12	17	Total Revenue Water	gallons per year	87,354,000
W-12	19	Total Non-Revenue Water	gallons per year	13,905,000
W-12	19	Percent Non-Revenue Water		14%
W-12	22	Utility Usage - treatment	gallons per year	719,000
W-12	23	Utility Usage - hydrant flushing	gallons per year	2,534,000
W-12	14	Utility Usage - bleeders	gallons per year	5,793,000
W-12	26	Utility Usage - all other (running customers & blow-offs)	gallons per year	819,000
W-12	30	Fire Protection	gallons per year	105,000
W-12	31	Main Breaks	gallons per year	594,000
W-12	35	Flushing Mains	gallons per year	
W-12	36	Total Accounted for Non-Revenue Water	gallons per year	10,564,000
W-12	37	Total Unaccounted Non-Revenue Water	gallons per year	3,341,000
		Estimated Water Loss From ALL Breaks, Leaks, & Bleeders	gallons per year	10,547,000
		<i>(PUC Accounts total of lines 14, 26,31,35 and 37)</i>		
		% of Water Loss of Total Production Water		10%
		<i>(PUC Lines 14,26,31,35,37 divided by Line 15)</i>		
W-9	9	Total Transmission Mains	feet	-
W-9	23	Total Distribution Mains	feet	
		Total Mains in Service	feet	192,552
			miles	36
		<u>Estimated Distribution System Losses:</u>		
		Loss Water per mile of pipe	gallons per mile per year	289,211
		Loss Water per foot of pipe per year	gallons per foot per year	55
		Loss water per foot of pipe per day	gallons per foot per day	0.15
		<u>Water loss will vary with age of water main - assume Straight line projection as follows:</u>		
		0 to 25 year old pipe	0 % of Total Loss	gallons per mile per year -
		26 to 50 year old pipe	10% of Total Loss	gallons per mile per year 28,921
		51 to 75 year old pipe	30% of Total Loss	gallons per mile per year 86,763
		over 75 year old pipe	60% of Total Loss	gallons per mile per year 173,527
			All Loses:	289,211
		Age of Main to be replaced	years	70
		Length of Main to be Replaced	mile	0.37
		CALCULATED WATER LOSS - FOR PROPOSED PROJECT	gallons per year	32,043
W-2	29c	Total PRODUCTION COST of Water	\$/year	\$ 992,668
W-12	15	Total Production Water	1,000 gallons per year	101,259
		Production Cost of Water	per 1,000 gallons	\$ 9.80
		PROJECTED ANNUAL VALUE of WATER LOSS	per year	\$ 314

Annual Savings	\$	314
PV Factor (uniform series present worth factor (1%, 75 years):	\$	52.587
Present Value of Savings over Economic life of pipeline:	\$	16,519
Project Cost	\$	580,150
PV Percent of Project Cost:		3%

ESTIMATED % Green	3%
\$ Amount Green	\$ 16,519